

PATENT CLAIMS

1. A liquid ring compressor and/or pump, comprising a rotating compressor casing (1), a shaft journal (10) eccentrically located relative to the compressor casing's axis of rotation, with a surrounding bearing (15), one or more compressor wheels (14) with at least one vane, disposed in the compressor casing with the inside of the compressor wheel (14) in abutment against and rotating around the bearing (15) and inlet and outlet ports for the fluid that has to be compressed, with the result that when the compressor casing is rotated, a liquid ring (20) is created against the inner wall of the rotating compressor casing (1), which liquid ring (20) together with the compressor wheel (14) forms compression chambers, characterised in that the liquid ring compressor further comprises at least one magnetic element mounted in the compressor casing (1) adjacent to the compressor wheel (14), where when the compressor casing (1) is rotated, the magnetic element makes the free-running compressor wheel (14) rotate at the same rotational speed as the compressor casing (1).
2. A liquid ring compressor according to claim 1, characterised in that the compressor casing (1) comprises magnetic elements on each side of the compressor wheel (14) in the longitudinal direction of the axis of rotation.
3. A liquid ring compressor according to one of the above-mentioned claims, characterised in that the magnetic elements are composed of one or more magnetic ring(s) which have alternate north pole (18) and south pole zones (19) along their circumference.
4. A liquid ring compressor according to claims 2 and 3, characterised in that the magnetic rings (17) on each side of a compressor wheel (14) either have the same pole zones or the pole zones are offset relative to each other.
5. A liquid ring compressor according to claims 3 and 4, characterised in that the magnetic ring (17) and a steel ring (16) are mounted in an annular cavity in the compressor casing (1), where the magnetic ring (17) is located adjacent to the compressor wheel (14) and the steel ring (16) is disposed at the opposite side of the magnetic ring (17) relative to the compressor wheel (14).
6. A liquid ring compressor according to one of claims 3-5, characterised in that parts of or the whole compressor wheel's vanes (21) are magnetised with a pattern substantially corresponding to the magnetic ring(s) (17).

7. A liquid ring compressor according to one of the above-mentioned claims, characterised in that the compressor wheel (14) is made of a material that conducts magnetic force lines.
8. A liquid ring compressor according to one of claims 1-6,
5 characterised in that the whole or parts of the compressor wheel (14) are made of a material that can be magnetised in a desired pattern.
9. A liquid ring compressor according to claim 7,
characterised in that the compressor wheel's (14) vanes (21) are composed of a laminated structure, which laminated structure is constructed by being divided into
10 layers in a direction parallel to or across the compressor wheel's axis of rotation.
10. A liquid ring compressor according to claim 9,
characterised in that the compressor wheel's (14) vanes are in pairs and composed of a common laminated structure element, where a layer in the laminated structure element has at least one surface dimension portion parallel to the axis of rotation for
15 the compressor wheel, and at least two surface dimension portions across the axis of rotation.